

US EPA ARCHIVE DOCUMENT

R9 Laboratory - Water Quality Monitoring Capabilities

Water Quality Sondes/Sensors



Acid Mine Drainage

pH , Temperature
Conductivity
Oxidation-Reduction Potential
Dissolved Oxygen
Depth
(9 Sondes)



Lake/River Studies

Temperature
Chlorophyll
Phycocyanin
Phycocerythrin
Rhodanine Dye
Green Algae
Blue-Green Algae
Turbidity
Oil
Depth
(1 system)



NPDES

pH , Temperature
Conductivity
Dissolved Oxygen
Ammonia
Nitrate
Chloride
Turbidity
Depth
(1 system)

Automated Sampling

Multipurpose
ISCO Samplers – Grabs or Composites
(triggered collection based on time,
depth/flow, or sensor-based thresholds
(e.g., pH, Specific Conductance)
3 systems



Storm Water

Global Water (peristaltic pump)
2 systems



D-TEC (Passive First Flush – 2 Systems)



Remote Internet Access (30 minute to one-hour intervals 24/7)



Cellular Telemetry – 1 system

Satellite Telemetry - 3 systems

**Test Site – Satellite Telemetry
Leviathan Mine Superfund Site
Alpine County – Sierra Nevada, California
Elevation 6000-7000 feet**

Acid Mine Drainage (AMD) emanates from a former copper sulfate mine as sulfuric acid and drains directly into Leviathan and Aspen Creeks. A satellite telemetry system provides project management a near real-time system to monitor two separate treatment systems and a compliance point. A sonde collects, and records water quality-monitoring data (pH, specific conductivity, ORP, DO, temperature, and depth), and a satellite modem transmits hourly to a third-party database provider that posts the data on the internet. The system works entirely off solar charged 12-volt battery power. Each location presents a unique set of challenges/concerns (satellite access, adequate sunlight, heavy snowfall, lightning strikes, flash floods, possible vandalism).



Aspen Creek



Leviathan Creek



Bryant Creek

<http://www.eureka-data.com/USEPAR9Lab/>

Leviathan Creek Water Quality Data Site

Please Select the site you wish to view:

Leviathan Creek - Station 15
Leviathan Mine Superfund Site - Alpine County, California
Station 15 is on Leviathan Creek approximately 50 meters upstream of the confluence of the Leviathan and Aspen Creeks.
Latitude: 38°43'4.11"N Longitude: 119°39'35.50"W

To download this data in an excel spreadsheet, click [here](#).

TimeStamp PDT	Temperature °C	Specific Conductance mS/cm	DO mg/l	pH	ORP mV	Depth m	Battery Volts
2009-03-03 08:00:00	0.3	0.94	11.9	5.1	620	-2.2	11.5
2009-03-03 07:00:00	0.4	0.94	11.8	5.1	622	-2.2	11.6
2009-03-03 06:00:00	0.5	0.94	11.7	5.0	623	-2.2	11.6
2009-03-03 05:00:00	0.6	0.94	11.7	5.0	624	-2.2	11.6
2009-03-03 04:00:00	0.7	0.93	11.7	5.0	625	-2.2	11.6

Presently, three satellite telemetry systems transmit data hourly, monitoring: 1.) Bioreactor-treated AMD in Aspen Creek, 2.) Lime-treated and un-treated (seasonal) AMD in Leviathan Creek, and 3.) Downstream compliance in Bryant Creek. Each site is accessible from a drop down menu on a public internet site (password protection available). Download data in an Excel® spreadsheet format.